

CLAIMS

I claim:

- 1 1. A sealing system for reducing a gap between a tip of a shrouded
2 turbine blade and a stationary shroud of a turbine engine, comprising:
3 a turbine blade assembly having at least one stage formed from a plurality of
4 shrouded turbine blades;
5 at least one seal land coupled to at least one shrouded turbine blade, the at
6 least one seal land extending from a tip of the at least one shrouded turbine blade
7 toward the stationary shroud of the turbine engine and having a curved configuration;
8 and
9 wherein the at least one seal land is adapted to straighten from a curved
10 resting position to an operating position where a tip of the at least one seal land is
11 closer to the stationary shroud of the turbine engine than when the turbine engine is
12 in a resting position.
- 1 2. The sealing system of claim 1, further comprising at least one
2 protrusion extending from the stationary shroud toward the turbine blade assembly.
- 1 3. The sealing system of claim 2, wherein at least one protrusion extends
2 circumferentially about an axis of rotation of the turbine blade assembly.
- 1 4. The sealing system of claim 2, wherein the at least one seal land
2 comprises at least a first seal land and a second seal land, wherein the first seal land
3 is positioned on the shrouded turbine blade upstream of the at least one protrusion
4 extending from the stationary shroud, and the second seal land is positioned on the
5 shrouded turbine blade downstream of the at least one protrusion extending from the
6 stationary shroud.
- 1 5. The sealing system of claim 1, wherein the at least one seal land is
2 attached to the shrouded turbine blade by sliding the at least one seal land into a slot
3 in the tip of the shrouded turbine blade.

1 6. The sealing system of claim 1, wherein the at least one seal land is
2 brazed to the tip of the shrouded turbine blade.

1 7. The sealing system of claim 1, wherein the at least one seal land is
2 formed from a curved bi-metallic strip.

1 8. The sealing system of claim 7, wherein the at least one seal land is
2 formed from a first material having a first coefficient of thermal expansion and a
3 second material having a second coefficient of thermal expansion greater than the
4 first coefficient of the thermal expansion, wherein the first material forms the outer
5 perimeter of the at least one seal land and the second material forms the inner
6 perimeter of the at least one seal land.

1 9. The sealing system of claim 1, wherein the at least one seal land is
2 curved into a gas flow.

1 10. A turbine engine having a sealing system for reducing a gap between a
2 tip of a shrouded turbine blade and a stationary shroud of a turbine engine,
3 comprising:
4 at least one shrouded turbine blade;
5 at least one seal land coupled to at least one shrouded turbine blade, the at
6 least one seal land extending from a tip of the at least one shrouded turbine blade
7 toward the stationary shroud of the turbine engine and having a curved configuration;
8 at least one protrusion extending from the stationary shroud toward the
9 turbine blade assembly;
10 wherein the at least one seal land is adapted to straighten from a curved
11 resting position to an operating position where a tip of the at least one seal land is
12 closer to the stationary shroud of the turbine engine than when the turbine engine is
13 in a resting position.

1 11. The turbine engine of claim 10, wherein at least one protrusion extends
2 circumferentially about an axis of rotation.

1 12. The turbine engine of claim 10, wherein the at least one seal land
2 comprises at least a first seal land and a second seal land, wherein the first seal land
3 is positioned on the shrouded turbine blade upstream of the at least one protrusion
4 extending from the stationary shroud, and the second seal land is positioned on the
5 shrouded blade downstream of the at least one protrusion extending from the
6 stationary shroud.

1 13. The turbine engine of claim 10, wherein the at least one seal land is
2 attached to the blade by sliding the at least one seal land into a slot in the tip of the
3 shrouded blade.

1 14. The turbine engine of claim 9, wherein the at least one seal land is
2 brazed to the tip of the shrouded blade.

1 15. The turbine engine of claim 9, wherein the at least one seal land is
2 formed from a curved bi-metallic strip.

1 16. The turbine engine of claim 15, wherein the at least one seal land is
2 formed from a first material having a first coefficient of thermal expansion and a
3 second material having a second coefficient of thermal expansion greater than the
4 first coefficient of the thermal expansion, wherein the first material forms the outer
5 perimeter of the at least one seal land and the second material forms the inner
6 perimeter of the at least one seal land.

1 17. The turbine engine of claim 10, wherein the at least one seal land is
2 curved into a gas flow.